What is claimed is:

1. A welding method comprising the steps of:

causing a welding current to flow between a workpiece and an welding electrode, said welding current having a waveform including a periodic repetition of a cycle consisting of an AC current portion during which an AC current is supplied and a DC current portion following the AC current during which a DC current is supplied; and

inserting at least one current pulse of polarity opposite to the polarity of said DC current during said DC current portion;

said DC current flowing from said workpiece to said welding electrode.

2. The welding method according to Claim 1 wherein said at least one current pulse comprises a plurality of regularly spaced pulses.

3. The welding method according to Claim 1 wherein said at least one current pulse comprises a plurality of pulses with at least one of said pulses spaced from other pulses by a different amount.

4. A power supply apparatus for use in welding, comprising:

a DC power supply having positive and negative terminals and being adapted to supply a welding load including a welding electrode and a workpiece with a positive current from said positive terminal and with a negative current from said negative terminal;

a first semiconductor switching device operative to intermittently interrupt the current supplied from said positive terminal to said welding load;

a second semiconductor switching device operative to intermittently interrupt the current supplied from said negative terminal to said welding load; and

control means for controlling the ON-OFF operation of said first and

second semiconductor switching devices;

wherein said control means operates to control said first and second semiconductor switching devices in such a manner as to provide a repetition of a cycle consisting of an AC period during which said first and second semiconductor switching devices are alternately rendered conductive, and a positive DC period following said AC period during which said first semiconductor switching device is rendered continuously conductive; and

said control means forms a negative pulse period in said positive DC period by simultaneously rendering said first and second semiconductor switching devices nonconductive and conductive, respectively, at least once during said positive DC period, and, thereafter, simultaneously rendering said first and second semiconductor switching devices conductive and nonconductive, respectively.

5. The power supply apparatus according to Claim 4 wherein a plurality of such negative pulse periods are disposed at regular intervals.

6. The power supply apparatus according to Claim 4 wherein a plurality of such negative pulse periods are disposed with at least one of said negative pulse periods spaced from other negative pulse periods by a different amount.

7. The power supply apparatus according to Claim 4 further comprising:

a first reactor connected between said positive terminal and said first semiconductor switching device; and

a second reactor connected between said negative terminal and said second semiconductor switching device;

said first and second reactors being wound on a same core in such a manner that voltages of opposite polarities can be induced therein.